

Star Light, Star Bright

by Monica Kulling

What makes a star bright?

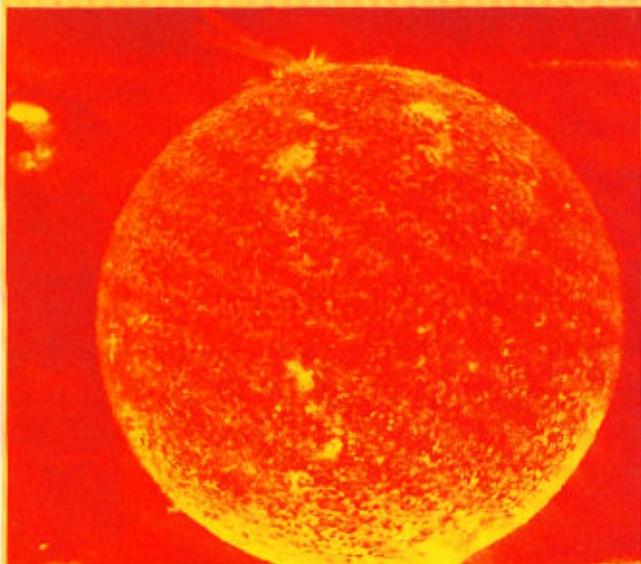


The Seven Sisters of the Pleiades

A star is like a huge burning ball, and its fire gives off the light we see. The fuel for its fire comes from different types of gas. When these gases come together, they burn—and they give off heat and light. These gases provide the fuel for the life of the star.



Is the Sun a star?



Apollo telescope shows solar eruption

Yes, the Sun is a star—a huge ball of burning gases. It gives off heat and light to Earth. The reason it looks bigger and brighter than the other stars is that it is much closer to us on Earth. If the Sun were as far away as the other stars in the sky, it would look as small as them.

Why do stars disappear in the daytime?

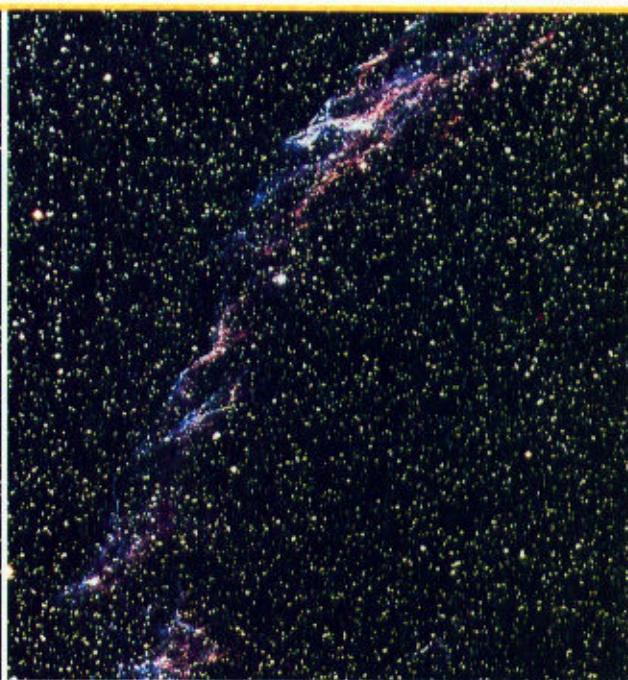
The stars are always in the sky, even during the day. But we cannot see them because the light from the Sun is too bright. The stars “come out” at night when the Sun is setting and the sky begins to darken. The darker the sky gets, the more stars we see. There are billions of stars in the Milky Way Galaxy.



Trail of Echo satellite against the Milky Way



Andromeda Galaxy, the nearest large spiral galaxy



Just a small part of the Milky Way, showing veil nebula in Cygnus

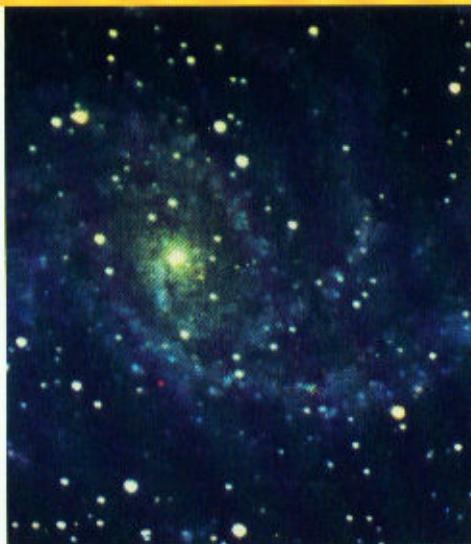
What is a galaxy?

A galaxy is a group of stars and planets, of gases and dust, all held together by gravity. (Gravity is the force that keeps us from falling off the Earth.) There are billions of stars in each galaxy, and there are many galaxies in the Universe. But the Milky Way Galaxy is our galaxy.

What is the Milky Way?

When you look up at the night sky, you can see a hazy band of light stretching across the sky. The stars in this hazy band are only part of the Milky Way Galaxy. There are billions more that you can't see. These stars and the Sun and the nine planets, including Earth, that spin around it are all part of the Milky Way Galaxy.

Is the Sun the hottest star?



A spiral galaxy, with hot blue stars

No, there are many stars that are hotter than the Sun. The hottest stars are bluish in color, just like the center of a candle flame. The coolest stars are reddish in color. The stars that have a relatively medium temperature—neither the hottest nor the coolest—are yellow in color, like our Sun.

Are stars all the same size?

Stars come in different sizes. The Sun is a medium-sized star. It is bigger than all the nine planets in our Solar System put together. So, as you can imagine, it's pretty big! But there are stars that are many, many times bigger than the Sun. Betelgeuse, in the constellation of Orion, is 400 times bigger than the Sun. A star called Epsilon Aurigae is 5,000 times bigger than our Sun.



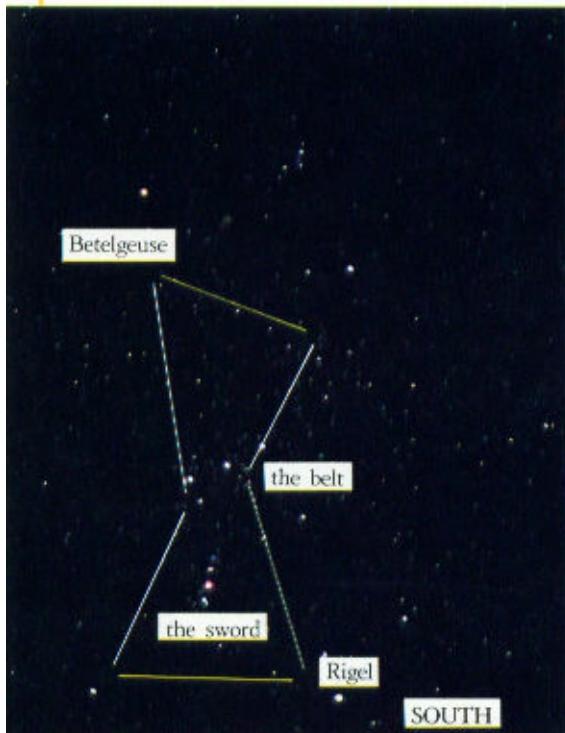
The constellation Orion, the hunter

What is a constellation?

Look up into a clear night sky and you will see some bright stars that form a pattern or “star-picture.” If you could connect the stars like a dot-to-dot puzzle, you might see the outline of a hunter, a great bear, or a queen. People with a lot of imagination first named these star-pictures, or constellations, many years ago.

And we still use the names today:

Orion—the hunter,
Ursa Major—the great bear,
Cassiopeia—the queen.
But the constellations change position with the seasons, so it's hard at first to recognize their patterns. A good guide book helps—one that shows the imaginary star-to-star outline of each constellation.



Artist's interpretation of the Greek hunter